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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/779,566

02/09/2001

Takahiro Kumura

074273/0181

6166

22428

7590

07/12/2004

FOLEY AND LARDNER
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3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2631

6

DATE MAILED: 07/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/779,566

Applicant(s)

KUMURA, TAKAHIRO

Examiner

Qutub Ghulamali

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3,4,5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In the instant application the abstract of the disclosure exceeds the range of 50-150 words limitation.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US Patent No. 6,094,449) in view of Nakano (US Patent 6,219,391).
4. Consider claims 1, 2, 6-9, 12, Komatsu teaches (fig. 2), a spread spectrum communication synchronization acquisition apparatus comprising;

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a plurality (greater than 1) of short-time integration path search units 6 for calculating correlation values from a received signal (i.e., for integrating the power value for the integration time corresponding to the plural slots) and selects higher (larger ones) power values in the magnification order of power per slot from a larger power value to a lower power value by the number of the first correlators 4', a long time integration path search unit 7 for integrating the power value for an integration time longer than that of the short-time integration path search unit 6 by the time corresponding to plural slots and selecting higher power values in the magnification order of power per slot from a higher power value to a lower power value by the number of the first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing for demodulation to obtain a correlation value, and outputs demodulation timing data indicative of path (reception) timings (col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42). Komatsu, however, does not disclose a frequency offset estimating section, which estimates frequency offsets of correlation values and power values and demodulation timing data and calculates phase change values from the estimated frequency offsets to output to search section. Nakano discloses (fig. 4) a pilot despreading section 201 despreads received signals using spread codes, a filtering section 202, a frequency offset estimation section 203 estimates the amount of frequency offset of correlation values and power values and demodulation timing

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data and calculates phase change values from the estimated frequency offsets (col. 5, lines 45-67; col. 6, lines 1-5, 25-49).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Komatsu to provide a frequency offset estimating section, which estimates frequency offsets of correlation values and power values and demodulation timing data and calculates phase change values from the estimated frequency offsets to output to search section so as sufficiently decrease the interference added onto the received signals as taught by Nakano.

Regarding claims 3, 5, 11, 14, Komatsu teaches a signal converter for converting the received (reception) spread spectrum signal into a baseband signal, a sample and hold circuit for sampling the baseband signal, holding the sampled baseband signal and outputting the sampling signal, a symbol integrator 5, the correlation value is demodulated on the basis of the theoretical value of the symbol corresponding to the correlation value or the judgment value after demodulation, and integrated over plural symbols to obtain a power value, a first correlators 4', a demodulation path selection unit 8 which selects path (reception) timings from timing data for demodulation in the magnification order of power per slot from timings which are selected by excluding the same timing and adjacent timings thereto in the short-time integration path search unit 6 and the long-time integration path search unit 7, a second correlator 9 for correlating the reception signal and the spread signal at the reception timing (abstract; col. 2, lines 63-67; col. 8, lines 27-67; col. 9, lines 1-8; col. 11, lines 1-42).

Regarding claim 4, 10, 13, Komatsu teaches in combination with teachings highlighted above, calculating the power of the integration of the plural symbols, thereby obtaining a power

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value; a short-time integration path search unit for adding power values over plural slots (i.e., integrating the power value for the integration time corresponding to the plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of the power per slot from a larger power per slot to a lower power per slot; a long-time integration path search unit for adding power values over plural slots whose number is larger by plural slots than that of the short-time integration path search unit (i.e., integrating the power value for an integration time longer than that of the short-time integration path search unit by the time corresponding to plural slots) and selecting higher power values, the number thereof corresponding to the number of the first correlators, in the magnification order of power per slot from a larger power value to a lower power value; a demodulation path selection unit for selecting a reception timing for demodulation (col. 3, lines 5-30).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miura (US Patent 6,628,700), Atarius et al (US Patent 6,373,882), Asahara et al (US Patent 6,353,642) are cited as arts of interest showing synchronization apparatus.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (703) 305-7868.

The examiner can normally be reached on Monday-Friday from 8:00AM - 5:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammed Ghayour can be reached on 703 306-3034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
July 1, 2004.


KHAI TRAN
PRIMARY EXAMINER *2/7/04*